UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
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ATLANTA, GEORGIA 30303-8960

June 28, 2012

US Army Corps of Engineers, Wilmington District
Regulatory Field Office, Attn: Mr. Mickey T. Sugg
69 Darlington Avenue
Wilmington, NC 28403

SUBJECT: **Draft Environmental Impact Statement (DEIS) for Figure Eight Island Inlet and Shoreline Management Project, Terminal Groin Installation and Supplemental Beach Nourishment, Implementation, New Hanover County, NC; CEQ Number: 20120158; ERP Number: COE-E39086-NC; CEQ Federal Register Date: 05/25/2012**

Dear Mr. Sugg:

Pursuant to Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA), EPA Region 4 has reviewed the Draft Environmental Impact Statement (DEIS) for the Figure Eight Island Inlet and Shoreline Management Project. This DEIS features an evaluation of the environmental consequences of a proposed management plan for North Carolina's Rich Inlet that would mitigate chronic erosion on the northern portion of Figure Eight Island with a goal of preserving the integrity of its infrastructure, providing protection to existing development, and ensuring the continued use of the oceanfront beach along the northernmost three miles of its shoreline. EPA understands that the Figure Eight Beach Homeowners Association is seeking Federal and State permits to allow development of this management plan for Rich Inlet. The DEIS, prepared by the Wilmington District, Corps of Engineers, Regulatory Division (COE), assesses this proposed management plan, which features a proposed "terminal groin" installation with supplemental beach nourishment. EPA notes that Figure Eight Island is located in northeastern New Hanover County, and is currently an unincorporated privately developed residential North Carolina barrier island with 465 homes and 93 undeveloped lots. The island is bordered to the south by Mason Inlet and Wrightsville Beach and to the north by Rich Inlet and Hutaff Island, an undeveloped, privately-owned island. Hutaff Island is recognized as one of the few remaining undeveloped and vehicle-free barrier islands on the North Carolina coast, and is considered to be "among the largest near-pristine barrier island and salt marsh systems in the region" according to the DEIS.

Figure Eight Island covers approximately 1300 acres, is approximately 5.0 miles long and approximately 0.4 miles wide. The proposed project is located along the oceanfront shoreline on the northeast end of the island, and within Nixon Channel and Rich Inlet. A number of studies (cited in the DEIS) have demonstrated that chronic erosion problems along the northern sections of Figure Eight Island have been directly linked to changes in the orientation and position of the main ebb channel through Rich Inlet. EPA notes that the DEIS appropriately includes a section on "purpose and need" for the project that includes the following justifications:

- Reducing or mitigating erosion along 2.34 miles of Figure Eight Island oceanfront shoreline south of Rich Inlet and 0.34 miles of backbarrier shoreline on Figure Eight Island along Nixon Channel;
- Providing reasonable short-term protection to imminently threatened residential structures over the next five years;
- Providing long-term protection to Figure Eight Island homes and infrastructure over the next 30 years;
- Acquiring compatible beach material in compliance with the North Carolina State Sediment Criteria for shore protection project;
- Maintaining the navigability within Rich Inlet and Nixon Channel;
- Balancing the needs of the human environment with the protection of existing natural resources;
- Maintaining existing recreational resources; and
- Maintaining the tax value of the homes and infrastructure on Figure Eight Island.

EPA also notes that the DEIS appropriately considers detailed alternatives for responding to the on-going erosion along the north side of Figure Eight Island. The DEIS includes detailed discussions of each alternative, how each was formulated and the costs of implementation. An economic impact assessment on the existing island development and infrastructure is also included in the DEIS (Chapter 5). As requested by EPA for similar coastal erosion projects studied by the COE, both "no action" and "abandon/retreat" were considered in the DEIS among the detailed alternatives:

- Alternative 1 – No Action
- Alternative 2 - Abandon/Retreat
- Alternative 3 - Rich Inlet Management with Beach Fill
- Alternative 4 - Beach Nourishment without Inlet Management
- Alternative 5A - Terminal Groin with Beach Fill from Maintenance of the Nixon Channel
- Navigation Channel and Connector Channel
- Alternative 5B - Terminal Groin with Beach Fill From Other Sources

The DEIS reports that development of the recommended channel modifications and inlet management plan for Rich Inlet involved a screening process utilizing "Delft3D" computer model simulations ("runs") in which various designs for Nixon Channel, Green Channel and the main entrance channel were evaluated. The results of all screening runs are included in the DEIS (Appendix B), as well as the morphologic conditions/history of Rich Inlet developed by Dr. William Cleary of the University of North Carolina at Wilmington, which are included with the DEIS (Sub-Appendix A in Appendix B).

Alternative 5B has been identified in the DEIS as the "Applicant's Preferred Alternative," and this alternative features a "terminal groin" with beach fill (from other sources). The terminal groin in 5B would have the same design as that described for Alternative 5A, as would the beach fill plan proposed along Nixon Channel. Analysis of the Delft3D model results for Alternative 5A indicated the initial beach fill was excessive, particularly along the segment of

the beach south of station 80+00. The DEIS reports that beach fill design associated with Alternative 5A was based upon the "optimal utilization of the material removed to construct the new channel connector" from the inlet gorge into Nixon Channel and not on the beach fill volume needed to offset shoreline erosion. Since Alternative 5B does not include the excavation of a new connector channel into Nixon Channel, the beach fill for 5B was designed to address only erosion protection needs.

In addition to appropriately including information on "purpose and need" and including a detailed alternatives analysis, EPA notes that the DEIS complies with NEPA by including a chapter on the "affected environment" and identifying existing resources which occur in the project area. Further, the DEIS also includes a chapter on environmental consequences and evaluates the project alternatives and discusses the anticipated changes to the existing environment including "direct, indirect, and cumulative effects." Finally, the DEIS appropriately includes a chapter on avoidance and minimization and describes several actions and measures incorporated to avoid or minimize adverse effects to resources. EPA offers the following comments on the DEIS for your consideration:

Detailed Comments

Material for periodic nourishment of Alternative 5B is proposed to come from maintenance dredging of the existing permit area in Nixon Channel using by a 16-inch to 20-inch cutter-suction pipeline dredge (the same size dredge proposed for use for initial construction). The DEIS states that "should the available shoal volume be less than needed to maintain the beach fill, some supplemental fill could be obtained from the upland disposal areas next to the AIWW." EPA recommends that the FEIS identify these potential upland areas (preferably including a map) and fully discuss material transportation issues associated with their use.

2. EPA understands that two areas of potential hardbottom resources located offshore Figure Eight Island and Hutaff Island were identified in 2000 and that in order to verify the presence of hardbottom communities within the project area, a sidescan sonar survey was conducted off Figure Eight Island in April 2009. Following analysis and interpretation of the sidescan sonar data, a groundtruthing investigation of several sites was conducted in June 2009 (report included in Appendix D), and no hard bottom communities were found. If further updated investigations are conducted as part of future permitting requirements, the presence of rock outcrops or hardbottom communities (either exposed or buried) within the Permit Area should be noted in the FEIS.

   The North Carolina Recreational Water Quality Program (RWQ) monitors the quality of N.C.'s coastal recreational waters and notifies the public when bacteriological standards for safe bodily contact are exceeded. The RWQ tests for Enterococci bacteria at three RWQ sampling stations that are located within the Permit Area. These stations include Station 50 (located in the AIWW between Mason's Creek and Pages Creek), 50A (located in Middle Sound at the south end of Figure Eight Island), and 50B (located in Nixon's Channel). Information taken at the stations reportedly includes salinity readings. The DEIS includes information from these stations taken during 2007 and if more recent information is available

it should be included in the FEIS.

4. The DEIS reports the State of North Carolina also performed preliminary water quality monitoring at 13 sites within the Permit Area in March 2007. Physical parameters collected included depth, temperature, specific conductivity, dissolved oxygen, pH, and turbidity. All dissolved oxygen observations were above the State Standard of 5.0 mg/l with an average value of 8.2 mg/l. If more recent information is available it should be included in the FEIS.

5. The DEIS notes that five species of threatened or endangered sea turtles utilize the waters of North Carolina for breeding, feeding and development and that the threatened green sea turtle has been observed in Brunswick, Carteret, Dare, Hyde, New Hanover, Onslow and Pender Counties. According to data supplied in the DEIS (2008), no green sea turtle nest have been observed in the study area on either Figure Eight Island or Hutaff Island. Also, since monitoring began, only one Kemp's ridley nest has been observed within in the project area on Figure Eight Island (2010) and that no leatherback sea turtle nest have been reported within the project area "within recent years." The U.S. Fish and Wildlife Service (USFWS) North Carolina Office reports that the presence of hawksbill sea turtles along the North Carolina coast is rare and the DEIS states that "none are expected to be present" in the study area. If updated information is available on any turtle nesting observations it should be included in the FEIS.

6. EPA recommends that all project construction and dredging operations avoid the Civil War era shipwreck, the Wild Dayrell and that follow-up geophysical investigations continue to keep this cultural resource accurately mapped in order to protect it during all construction activities, as well as future maintenance operations (including dredging and periodic nourishment).

7. EPA notes that the COE appropriately invited participation in the NEPA process by federal, state, local government agencies and other interested organizations and persons. Currently the COE is reportedly conducting consultation efforts with the U.S. Fish and Wildlife Service (USFWS) under the Endangered Species Act and the Fish and Wildlife Coordination Act; with the National Marine Fisheries Service (NMFS) under the Magnuson-Stevens Act and Endangered Species Act; and with the North Carolina State Historic Preservation Office (NCSHPO) under the National Historic Preservation Act. EPA recommends that the COE's consultation with the USFWS regarding species listed under the Endangered Species Act (ESA) result in the development of a Biological Assessment (BA). EPA further recommends that the COE's consultation with the NMFS regarding essential fish habitat result in the development of an Essential Fish Habitat (EFH) assessment.

8. Because the NEPA process includes an assessment of potential water quality impacts pursuant to Section 401 of the Clean Water Act, EPA concurs with the COE's efforts to coordinate with the North Carolina Division of Water Quality (DWQ) and seek a DWQ Section 410 water quality certification. Further, EPA concurs with the COE's coordination with the North Carolina Division of Coastal Management (DCM) to ensure the full compliance with all State Environmental Policy Act (SEPA) requirements and to determine consistency with the Coastal Zone Management Act (CZMA). EPA recommends that the

FEIS document all of these efforts at coordination and include in the appendices all certifications.

Thank you for the opportunity to comment on this DEIS. Based upon our review, a NEPA rating of EC- 2 has been assigned to this DEIS, meaning we have environmental concerns and have requested that the FEIS include updated information (where available) on a number of areas and issues. If we can be of further assistance, please contact me at (404) 562-9611 or Mueller.heinz@epa.gov, or Paul Gagliano, P.E., at (404) 562-9373 or gagliano.paul@epa.gov, or Dan Holliman at (404) 562-9531 at holliman.daniel@epa.gov.

Sincerely,

FOR Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management